



SEPTIC SYSTEMS, THE SANITARY SURVEY PROCESS AND SEWER HEALTH PROJECTS

DEPARTMENT OF PUBLIC WORKS (DPW)
DEPARTMENT OF ENVIRONMENTAL PROTECTION & SUSTAINABILITY (EPS)

Septic Systems

A modern septic system is composed of a large tank (usually 1,500 gallons) that accepts all wastewater from the house. In the tank, the solids settle to the bottom and the liquid or *effluent* flows from the tank to drain fields or dry wells (also called seepage pits) that are designed to allow the effluent to be absorbed into the soil.

You can think of the soil as a natural filter that is capable of removing pathogenic bacteria and viruses from the wastewater as it percolates down to the ground water system. We know from testing and experience that septic systems, properly sited and designed, do an excellent job of effectively and safely disposing of domestic wastes.

When an application is made to install a new septic system or repair an existing system, EPS looks for two general criteria to be met:

- The soils must be suitable to allow a septic system to function *hydraulically* (i.e., the soils must be permeable or be able to accept water); and
- The soils must be of sufficient texture, structure, depth and aerial extent to properly *renovate* (or clean) the wastewater.

Septic System Failures

It is not a given that every property can safely and effectively accommodate a septic system. This, in fact, is the reason that we require testing of every property where new construction or significant additions or changes in use are proposed.

Unfortunately, many properties were developed on unsuitable soils prior to the early 1970's when regulations concerning septic systems were put into place. In the cases where we discover a septic system failure (effluent at the surface or discharging directly to the ground water), we try to work with the property owner as best we can to correct the failure and still comply with the regulations.

Septic system failures are a human health and environmental concern.

Sanitary surveys

Upon request, EPS conducts sanitary surveys by performing a house-to-house inspection of each septic system. Indications of a failing septic system include:

- Observable discharge to the surface
- Overflow pipes from laundry or the septic system to the ground, ditch or stream
- Elevated sewage levels in dry wells
- Observable odors
- Use of holding tanks
- Shallow ground water conditions as evidenced by springs or nearby water bodies
- Lush grass growth over septic system components
- Reports from the homeowner of sewage back-ups, the need for frequent pump-outs, or intermittent discharge to the surface.

The results of a particular survey may depend on the season, the weather, the amount of water used immediately prior to the inspection (e.g., laundry day), and the cooperation of the residents.

Solutions to Septic System Failures

In many cases, we are able to find an on-site solution to a septic failure. In some cases we cannot, and the only solutions are a holding tank or extending public sewer to the area in question.

A holding tank is just that - all wastes generated are drained to and held in a tank with no outlet. All wastes must be pumped on a regular basis by a licensed septic waste hauler and ultimately discharged to a public sewer or public wastewater treatment system. Due to the high cost of pumping out these holding tanks and the temptation by the property owner to illegally discharge these wastes to save money, we view holding tanks as a true last resort option.

In making a recommendation as to whether public sewer ought to be extended for a given area, EPS takes into consideration a variety of factors including the following:

- The observed failure rate
- The known soil conditions
- The size of the lots
- The distance and location of existing public sewer
- The likelihood and relative costs of making suitable on-site corrections.

It is rare that we are able to observe a 100% failure rate during a particular survey, and there is no minimum percentage of failures that triggers an automatic recommendation

to extend public sewer. However, EPS tries to assess the overall impact to the community/environment as a whole when making a recommendation.

Extending Public Sewer Via a Health Project

Unlike other utilities such as power and cable, sewer extensions are generally not economically feasible unless the cost is shared by all of the property owners. Therefore, if EPS recommends that public sewer be extended for **health reasons** and the Department of Public Works (DPW) agrees to do so, all homeowners that have access (property frontage) to the new sewer line, even if their septic system is not failing at that time, are required to connect to the system when it becomes available.

Legal Authority

The legal authority for the County to extend public sewer for the protection of public health is specified in the Baltimore County Code 20-2-102.

Design Process

The Sewer Design Section of the Bureau of Engineering and Construction in the Department of Public Works (DPW) is responsible for the design of the project and coordinates:

- **Field surveys** for the design (establish the topography, property lines and location of existing utilities, structures, roads and property lines necessary for the design.
- **Engineering Design** - Generally speaking, the project will be designed in the most cost effective way taking into consideration the depth and location of waste lines leaving each house, the depth and location of the existing public sewer.
- **Environmental Permitting** - environmental permits may be needed from the County and possibly State and Federal regulatory agencies.
- **Land Acquisition** - The design may require property rights (easements) from private properties. The design plans are be sent to the Count's Real Estate Compliance Division to ensure that the **County obtains the necessary legal rights**-of-way to construct the sewer. The time it takes for this step for this process is largely dependent on the level of cooperation received from individual property owners.

Project Advertisement for Construction

Once the design is complete, permits are obtained, and legal rights to enter private properties are secured, the project will be advertised to qualified contractors to bid on the project. The lowest responsive and responsible bidder is awarded the contract to build the project as designed.

Project Cost Allocations and Public Meeting

Based on the lowest bid, the cost allocation for each property owner will be determined by the Metropolitan District Financing and Petitions section of DPW. The formulas used to calculate these costs are in accordance with Baltimore County Code 20-3-101 through 220 and DPW policy. Each property owner will be sent information in the mail detailing the costs for their property along with the date, time and location of a public meeting where they can come to have specific questions addressed.

As stated above, the exact cost for the project will not be known until the bid is received and individual property owner costs calculated by DPW. However, it should be noted that because sewer is being extended as a "Health Project" the County offers residential properties 40-year financing for the construction, connection, and deficit costs, including the plumber's bill. These loans are treated as assumable liens on the property and the liens are not required to be paid off at property transfer. There is an option to defer payments for property owners that are 60 years or older and approved for a Homeowner's Tax Credit based on income. Disabled taxpayers **may** also qualify. For information about deferrals, please contact the Office of Budget and Finance at 410-887-4100. Certain properties may also qualify for a grant through the Bay Restoration Fund (BRF). For more information about the BRF, contact Groundwater Management at 410-887-2762. Additional financial assistance may also be available through the Department of Planning, Neighborhood Improvement at 410-887-3124.

Specific details about how costs are calculated and the financial options available are explained at the public meeting. Subsequent to the public meeting, DPW will send a request to the County Council to approve the use of County funds to construct the project.

Construction

Following County Council Approval, the lowest bid contractor will be awarded the job and the work will be scheduled. County inspectors will be on-site during the construction to ensure that the sewer is installed as designed and coordinate with the contractor to address any property owner concerns.

Everyone Must Connect

Upon completion of the sewer project, all property owners will be sent a notification that they **must** connect to the public system and abandon their existing septic systems within 1 year, unless ordered by EPS to do so sooner.

Overall Project Timing

The estimated time that it will take to complete this project is dependent on a variety of factors including:

- The number of other competing sewer extension and improvement projects
- The cooperation of property owners with obtaining rights-of-way
- The availability of funds to pay for and finance the project.

Generally speaking, it will take 1-3 years for the project to be completed. This could be longer based on the scope of the project, and the complexity of the environmental constraints and property acquisitions.

In the interim, it is the homeowner's responsibility to continue to maintain a septic system in such a manner that it does not cause an immediate public health threat or nuisance. This may involve having the septic system pumped at a frequency necessary to prevent the overflow of sewage to the ground surface.

Further Questions

If you have questions about:

- Your septic system or the recommendation to extend public sewer, please contact the Groundwater Management section of the Department of Environment & Sustainability at 410-887-2762.
- The status of the land acquisition process, you may call the Real Estate Compliance Section within the Department of Permits, Approvals & Inspections at 410-887-3280.
- The status of the project you may call the Sewer Design Section in the Bureau of Engineering and Construction within the Department of Public Works at 410-887-3762.
- The financing of the project you may call the Metropolitan District Financing and Petitions section of the Department of Public Works at 410-887-2423.